COMMONWEALTH OF VIRGINIA
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT
DIVISION OF MINERAL RESOURCES
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Commissioner of Mineral Resources and State Geologist

PUBLICATION 3
WAYNESBORO WEST QUADRANGLE
PLATE 2

GEOLOGIC MAP OF THE WAYNESBORO WEST QUADRANGLE, VIRGINIA

Geology by Paul G. Nystrom, Jr.

1977

Base map from U. S. Geological Survey, 1973
Waynesboro West Quadrangle, 7½-minute series

Williams & Heintz Map Corporation

SCALE 1:24 000

CONTOUR INTERVAL 20 FEET
DATUM IS MEAN SEA LEVEL

UTM GRID AND 1973 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

QUADRANGLE LOCATION

EXPLANATION

	ROCK CHARACTERISTICS	GEOLOGIC AND ECONOMIC FACTORS AFFECTING LAND MODIFICATION
QUATERNARY	al Alluvium: *Flood-plain and low level terrace deposits of sand and silt overlying silty clay and gravel; large cobbles present.*	Alluvium periodically flooded; cuts and excavations subject to sliding and sloughing; flooding restricts nonfarm uses. (Unit 14 in text.)
	al Alluvium: *Sand, cobbles, rounded boulders, and angular blocks, in upland stream valleys.*	Block fields and debris-filled valleys on the Blue Ridge subject to creep, slides, and local rockfalls. Droughtiness, steep slopes, and mass movement limit agricultural and nonfarm uses. (Unit 13 in text.)
	ta Talus deposits: *Cobbles, boulders, and angular blocks in a sand matrix.*	
	td Terrace and alluvial-fan deposits: *High-level terrace and alluvial-fan deposits of gravel and sand in a red clay matrix.*	Older, upland sediments of variable permeability; artificial cuts subject to creep and sloughing. Characteristics of underlying bedrock may greatly influence environmental response of terrace deposits to man-induced stress. (Unit 12 in text.)
TRIASSIC	sc Sandy clay: *Sand, clay, and coarse quartzite debris, (in cross sections A-A′ and C-C′ only)*	Suspected zone of solution and collapse, to occur locally beneath unit 7.
	d Diabase dikes: *Dark greenish-gray to black diabase.*	Weathers into large, rougn-surfaced, round boulders and bright-red clay. Difficult to excavate. (Unit 11 in text.)
ORDOVICIAN	Omb s, a, c Martinsburg Formation: s, *alternating thick-bedded, bluish-gray, brown-weathering, medium-grained, metamorphosed lithic sandstone and thin-bedded, dark-gray calcareous slate.*	Shallow, shaly, acidic soil overlying slate and metamorphosed sandstone. Cuts subject to sliding and sloughing. (Unit 10 of text.)
	a, *very thin to medium-bedded, dark-gray calcareous slate alternating with tan-weathering argillite and dark-gray argillaceous limestone.* c, *black, graptolitic slate; very rare argillite lamelli.*	Shallow, residual soils overlying calcareous slate, interbedded argillite, and argillaceous limestone. Shallow cover subject to severe erosion on denuded slopes. (Unit 9 in text.)
	Oln Lincolnshire Formation: *Dark-gray, medium-grained, medium- to thick-bedded limestone with abundant black nodular chert and thin, irregular pink or brown partings. A gray, coarsely crystalline, bioclastic limestone is present locally.* New Market Limestone: *Dove-gray, massive, micritic limestone.*	Shallow soils developed on hills, locally cherty soil and high shrink-swell clay. Sinkholes are common. (Unit 8 in text.)
	Ob Beekmantown Formation: *Interbedded dove-gray, micritic limestone and thick-bedded, fine- to medium-grained, light-gray dolomite (upper part). Massive beds of light-gray and dark-gray dolomite with interbedded chert (middle part). Interbedded dark-gray, laminated limestone and gray, medium- to coarse-grained, thick-bedded dolomite (lower part).*	Deep, well-drained clayey soils on gentle slopes. Moderate permeability and moderately high shrink-swell potential. Conical hills are underlain and covered by massive chert. Large sinkholes and caves are common. (Unit 8 in text.)
	Och Chepultepec Formation: *Dark-gray to bluish-black, fine-grained, thick-bedded cherty limestone with a few thin interbeds of orangish-yellow weathering, gray dolomite. Siliceous laminae are abundant in the lower part.*	Generally deep, clayey soils on gently rolling terrain; small sinkholes common. (Unit 8 in text.)
CAMBRIAN	Cco s Conococheague Formation: *Dark-gray, fine-grained, algal limestone alternating with ribbon-banded limestone, thinly laminated limestone, and light-brown weathering, laminated to thick-bedded dolomite.* s, *light-tan to brown, medium- to coarse-grained sandstone occurs as thin beds in the lower part and as thicker, more persistent beds in the middle part.*	Generally shallow clayey soils, moderate permeability. Sinkholes and caves are well developed at or near sandstone beds. Soil is sandy, deeper, and more permeable downslope from the sandstone beds. (Unit 8 in text.)
	Ceu Cel Elbrook Formation: Ceu, upper member, *characteristically orangish-yellow weathering, gray to dark-gray crystalline dolomite with phyllitic and slaty interbeds; some thin interbeds of dark-gray algal limestone.*	Moderately deep, well-drained soils, somewhat shaly. Small sinkholes are common. (Unit 8 in text.)
	Cel, lower member, *laminated to thin-bedded, pale-green phyllite and slaty dolomite; interbeds of laminated, fine-grained, buff to light-gray weathering, light- to dark-gray dolomite. Laminated red phyllite occurs locally.*	Shallow, shaly, clay soils with moderate permeability and moderately high shrink-swell potential. Extensive karst areas. (Unit 8 in text.)
	Cwb Waynesboro Formation: *Gray, brown, green, and red argillite and phyllite with interbeds of laminated to thin-bedded, light- to dark-gray dolomite and limestone, and tan, fine-grained, thin- to thick-bedded sandstone.*	Extreme variation in depth to bedrock where terrace deposits are present. Sinkholes common, particularly in overlying terraces. Soil thicknesses highly variable. (Unit 8 in text.)
	Cs Shady Formation: *(In cross sections only.)*	Suspected zone of solution and collapse at the west foot of the Blue Ridge. (Unit 8 in text.)
	Ca q Antietam Formation: *Thin-bedded, tan to white, metamorphosed, feldspathic sandstone, interlayered with green and pink, laminated phyllite and argillite (upper part). Massive, fine-grained, white to light-gray, Skolithos-bearing vitreous quartzite (lower part).* q, *thick, prominent quartzite ledge.*	Mountain land with shallow, stony, and sandy soils that grade upslope into rock fields and outcrop. High permeability and low to moderate shrink-swell potential. Creep and slides. (Unit 7 in text.)
	q Ch fs Harpers Formation: *Green to bluish-gray, quartz-chlorite-sericite phyllite, with thin to massive interbeds of grayish-green to bluish-gray metamorphosed sandstone.* q, *light-tan, prominent quartzite.* fs, *zone of metamorphosed, ferruginous sandstones.*	Mountain land with thin, excessively drained soils; rippable bedrock near surface. Low to moderate permeability and low shrink-swell potential. Artificial cuts are susceptible to erosion and sloughing. (Unit 6 in text.)
PRECAMBRIAN (?)	Cw Weverton Formation: *Light-brown weathering, green quartzose phyllite; thick, coarse-grained, reddish-purple, metamorphosed, ferruginous sandstone and light-gray, pebble quartzite. Laminated green or dark purplish-gray phyllite locally at base.*	Shallow, excessively drained, rocky soil. Moderate permeability and low to moderate shrink-swell potential. Creep and sloughing are common on steep slopes. (Unit 5 in text.)
	mt cs CpCc Catoctin Formation: *Fine-grained, dark greenish gray chlorite-epidote-albite schist and actinolite-chlorite-albite schist; amygdaloidal metabasalt, epidosite, epidote-quartz breccia, and greenish-gray metatuff.* mt, *mottled, greenish-purple, phyllitic metatuff.* cs, *light-green medium- to coarse-grained, metamorphosed, lithic sandstone and phyllite.*	Mountain land, with well-drained, rocky, red clay soils. Moderate permeability and low shrink-swell potential. Pervasive joints and cleavage throughout. (Unit 4 in text.)

OTHER LAND–MODIFICATION FACTORS

- Modified land: *Extensive cut and fill due to grading.*
- Rockfalls: *Areas of actual or potential rockfalls or slides not included in talus deposits.*
- Karst land: *Areas of known or potential sinkhole development, subsidence, and cave openings.*
- Sinkhole.

CONTACTS

- Exposed or approximate
- Indefinite contact along collapse breccia zone (in cross sections A-A′ and C-C′ only)

FOLDS

- Anticline—trace; direction of plunge
- Syncline—trace; direction of plunge
- Overturned syncline—trace; direction of plunge

FAULTS

- Black line where exposed or approximate; gray line where covered or inferred; U, upthrown side, D, downthrown side, T, upper sheet; arrows indicate direction of relative movement

BRECCIA

- b Collapse breccia

ATTITUDE OF ROCKS

- 45 Strike and dip of beds
- 50 Strike and dip of overturned beds
- Strike of vertical beds

FOLIATION

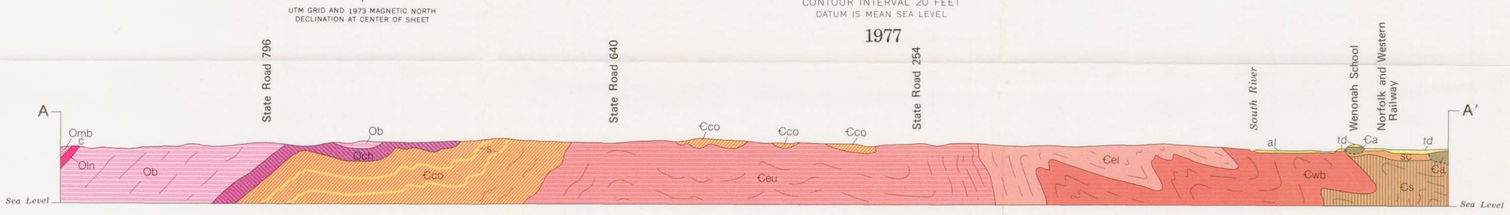
- 20 Strike and dip of schistosity

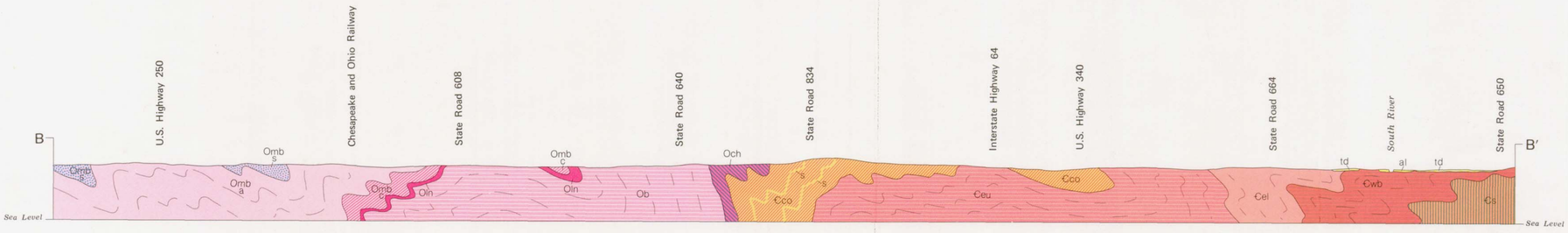
QUARRIES AND PROSPECTS

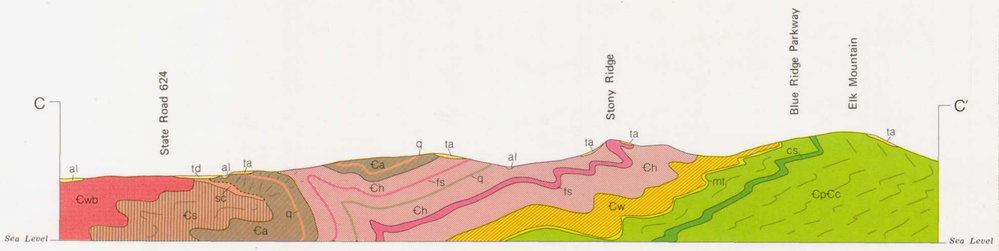
- Abandoned quarry
- q Crushed stone (quartzite)
- ls Crushed stone (limestone and dolomite)
- qp Quartzite and phyllite
- g Sand and gravel
- fm Prospect
- Iron-manganese

SAMPLE LOCATIONS

- R-6572 R, repository number of sample
- F-934 F, repository number of fossil sample







CROSS SECTION DESIGN:
1. No vertical exaggeration.
2. Subsurface structure interpreted from surface measurements.
3. Thickness of terrace deposits, talus deposits and alluvium diagrammatic